

A PRELIMINARY COMPARISON OF REINFORCER ASSESSMENT METHODS FOR CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

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We evaluated the relative treatment utility of a verbal forced-choice questionnaire, child nomination, and direct observation for identifying the most potent reinforcers for children with attention deficit hyperactivity disorder. Results demonstrated that all three methods were more likely to disagree than to agree, that a forced-choice format may enhance verbal reinforcer assessment, and that further development and evaluation of verbal reinforcer-assessment methods are needed.

DESCRIPTORS: attention deficit hyperactivity disorder, verbal reinforcer assessment, forced choice, simultaneous treatments

Controlled evaluations of verbal reinforcer-assessment methods are rare. Often, there appears to be an implicit assumption that children who are verbal are capable of identifying and naming their own reinforcers. Currently, reinforcers are most often selected on the basis of child nomination (i.e., "what do you like?" surveys) or, less frequently, on the basis of direct observation of high-frequency activities. In the field of developmental disabilities, reinforcer assessment procedures have been enhanced by the use of a forced-choice format (Fisher et al., 1992). A forced-choice format might also enhance verbal reinforcer assessment by providing a specific reference to possible responses, permitting multiple response opportunities, and requiring an active choice or discrimination (Bernstein & Michael, 1990). The purpose of this pilot investigation was to evaluate the relative treatment utility of a verbal forced-choice questionnaire, child nomination, and direct observation for identifying the most potent reinforcers for children with attention deficit hyperactivity disorder (ADHD).

METHOD: Participants. Participants were 9 boys and 1 girl between the ages of 5 and 8 years who met criteria for DSM-III-R diagnosis of ADHD. All were initially referred to a university-based clinic for the evaluation of ADHD, and none were receiving any medication at the time of assessment.

Assessment procedures and design. All assessments were conducted upon the child's arrival at the clinic. For child nomination, each child was shown the five toys and asked, "Of all the toys, which one is your favorite?" A forced-choice questionnaire was then administered, in which all combinations of the five toys were verbally presented in pairs (each toy occurred as an alternative four times). The children were asked, "Would you rather play with [Toy 1] or [Toy 2]?" Toys were ranked on the basis of frequency of selection. A 10-min direct observation of free play immediately followed. Direct observation was conducted by placing all five toys in the observation room and instructing the child to "Do whatever you want and we will be back in a little bit." Toys were ranked on the basis of percentage of intervals of toy engagement. A 10-min break was taken after the direct observation period in order to minimize the effects of satiation.

A simultaneous treatments design (Barlow, Hayes, & Nelson, 1984) was used to determine the relative reinforcement value of the toys identified as preferred by each assessment method. The toys that were identified as most preferred by each method were simultaneously made available by associating them with working at different tables containing identical academic tasks. Each child was told that he or she could earn play time with different toys for working at different tables and was given the instruction, "If you want to play with [Toy 1], you should work at this table, if you want to play with [Toy 2], you should work at this table," and so on. The child was also told that he or she could "change tables any time" and that it was "ok to just do nothing." The toy was placed either on or near the table. Immediately following the session, the child was allowed at least 2 min of free play with the toys associated with task engagement. Depending on agreement among the methods, one to three toys were associated with different tables. As a control, there was at least one table with an academic task but no associated toy. All sessions lasted 10 min.

Stimuli, response definitions, and measurement. Toys were always used as stimuli to facilitate a common measurement across the three assessment methods. Five toys were selected by the experimenter on the basis of age appropriateness and common availability; these were dinosaurs, cars, marble games, an Etch-a-Sketch®, and Tinker Toys®. Children were scored as engaged with a toy if they were either physically touching or directly facing the toy. Engagement with an academic task (arithmetic problems, copying letters) was the primary dependent variable and was defined as writing or directly facing the task. Control was scored if the child was not engaged. Through a one-way mirror, observers recorded data using a 15-s partial-interval recording procedure. Interval-by-interval interobserver agreement ranged from 87% to 100% ($M = 95\%$); these data were collected for 25% of all sessions. Agreement between the results of each assessment method for the toy identified as most preferred was considered to be an identical result and was calculated by dividing agreements by agreements plus disagreements and multiplying by 100%.

RESULTS AND DISCUSSION: Table 1 shows the toy identified as most preferred by each assessment method and the toy associated with the highest percentage of task engagement during the simultaneous treatments conditions. Table 1 also shows agreement between each assessment method and overall agreement with the simultaneous treatments conditions. Each method always identified a toy as preferred, and academic task engagement occurred on 100% of intervals for 9 of the 10 children. Identified toy preferences were highly variable across assessment methods. Overall, assessment methods disagreed more often than they agreed, with all three methods agreeing for only 1 child. When methods disagreed, nomination was

Table 1

Toys Identified as Preferred by Each Assessment Method and As a Reinforcer in the Simultaneous Treatments Condition

Nomination	Forced choice (% chosen)	Observation (% engagement)	Simultaneous treatments (% engagement)
EtchaSketch®	games (100)	EtchaSketch (30)	games (100)
games	TinkerToys (75)	games (100)	games (100)
dinosaur	TinkerToys (75)	TinkerToys (75)	TinkerToys (100)
TinkerToys®	TinkerToys (75)	games (95)	games (65)
dinosaur	EtchaSketch (75)	EtchaSketch (62)	EtchaSketch (100)
dinosaur	cars (100)	TinkerToys (100)	cars (100)
games	games (100)	cars (62)	games (100)
games	games (100)	games (100)	games (100)
TinkerToys	TinkerToys (75)	games (100)	TinkerToys (100)
EtchaSketch	TinkerToys (100)	cars (77)	cars (100)

Table 1
(Extended)

Agreement between assessment methods	Total agreement with simultaneous treatments
Nomination and forced choice: .4	Forced choice: .7
Nomination and observation: .3	Observation: .6
Forced choice and observation: .3	Nomination: .4

always much less likely to identify the contingent reinforcer. Forced choice and direct observation were about equally likely to do so.

The results suggest that (a) the utility of the different methods of reinforcer assessment may not be equivalent, (b) asking children with ADHD to identify and name their own reinforcers may have limited treatment utility, (c) the use of a forced-choice format may enhance verbal reinforcer assessment, and (d) further development and evaluation of verbal reinforcer-assessment methods are needed. Primary limitations include (a) the absence of more thorough treatment evaluations, (b) limited choices from only one class of stimuli, and (c) the likelihood that characteristics that define ADHD could uniquely confound each of the assessment methods. Replication with more typical children is suggested for future research. The results emphasize the potential importance of the response format and the nature and the structure of the specific questions to verbal methods of reinforcer assessment.

REFERENCES

Barlow, D. H., Hayes, S. C., & Nelson, R. O. (1984). *The scientist-practitioner*. New York: Pergamon Press.

Bernstein, D. J., & Michael, R. L. (1990). The utility of verbal and behavioral assessments of value. *Journal of the Experimental Analysis of Behavior*, 54, 173-184.

Fisher, W., Piazza, C., Bowman, L., Hagopian, L., Owens, J., & Slevin, I. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities. *Journal of Applied Behavior Analysis*, 25, 491-499.

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